

WHAT IS CLAIMED IS:

1. A reactor for reacting a feedstock, said reactor comprising,  
  
a fixed catalyst bed for reaction of said feedstock, said reactor containing a bypass apparatus disposed within said fixed catalyst bed,  
  
said bypass apparatus being aligned with the direction of flow of said feedstock, and wherein said bypass apparatus comprise  
  
a cage member comprising a first elongated hollow member having a top wall, sidewalls and a bottom wall, said cage member having openings therein, and  
  
a second hollow elongated member for passing said feedstock therethrough, said second hollow elongated member being disposed within and protruding through said top wall of said cage member and wherein said second elongated member extends above said catalyst bed through said cage member.
2. The reactor of claim 1 wherein the said second hollow elongated member is a tubular member having a diameter from about 0.25 to about 12 inches.
3. The reactor of claim 1 wherein said cage member is a tubular member having a diameter of about 3 to about 20 inches.
4. The reactor of claim 1 wherein said second hollow elongated member has a pressure drop of about 5 to about 50 times greater than that of said top layer of said catalyst bed when said catalyst bed is a fresh catalyst bed.

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5. The reactor of claim 1 further comprising a separation device disposed above said second hollow elongated member.

6. The reactor of claim 5 wherein said separation device is selected from the group consisting of caps, centrifugal separators and cyclones.

7. The reactor of claim 1 wherein said fixed catalyst bed contains packing material for distributing particulates passing through said bypass apparatus.

8. The reactor of claim 7 wherein said packing material is selected from the group consisting of catalyst particles, alumina balls, inert particles, inert packing and mixtures thereof.

9. A method for extending the operating life of a fixed bed reactor for reacting a feedstock in which a feedstock is contacted with a fixed bed of catalytic material contained in said reactor said fixed bed of catalytic material having a top and bottom layer and wherein the pressure drop across said top layer of said fixed bed of catalyst material increases during reaction of said feedstock due to fouling of said top layer of said fixed bed of catalytic material, comprising the sequential steps of (a) introducing said hydrocarbon feedstock into said fixed bed of catalytic material, (b) as said top layer of said fixed bed of catalytic material fouls, bypassing an increasing amount of said feedstock to said bottom layer of said fixed bed of catalytic material.

10. The method of claim 9 wherein said hydrocarbon feed is selected from the group consisting of liquid feed, vapor feed, and mixtures thereof.

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11. The method of claim 9 wherein said feedstock is selected from the group consisting of hydrocarbon feedstocks, chemical feedstocks, and mixtures thereof.

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